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ABSTRACT

In 1990, a study was conducted at California's San Joaquin Delta Community College (SJDCC) to examine student enrollment trends and to analyze alternative population projections. The purpose of the study was to prepare SJDCC for the fiscal, managerial, and educational challenges which the growing, ethnically diverse population would bring. Enrollment and population predictions suggested a greatly expanded local population, large increases in the number and ethnic composition of students, with minorities becoming the majority shortly after the turn of the century. Study findings included in the following: (1) the Department of Finance has predicted a county population increase of 46% by the year 2005, while the Center for Continuing Study of the California Economy has predicted a 71% increase; (2) by 2005, the ethnic minorities in the state were predicted to outnumber the White population; (3) fall enrollments at SJDCC are expected to rise to 32,781 students by 2005, up from 27,270 in 1988; (4) one in every 20 people in the San Joaquin County college-age population and one in every three recent high school graduates were registered at SJDCC in fall 1989; (5) for most age and ethnic groups, women had higher enrollment rates than men, with the exception being among Asian students; (6) in relation to their proportion of the total college-age population, Whites and Blacks enrolled at slightly lower rates, while Hispanic enrollments were well below average, and Asians enrolled at twice the average rate; and (7) Black and Hispanic males had the lowest enrollment rates in the 19-and-under age group in fall 1989. (JMC)

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RESEARCH REPORT

ED327241

Projecting Enrollments for Delta College

Explosive Population Growth Will Enlarge and Diversify Delta's Student Body

July 18, 1990

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OFFICE OF INSTITUTIONAL RESEARCH AND PLANNING

SAN JOAQUIN DELTA COLLEGE

Projecting Enrollments for Delta College

Explosive Population Growth Will Enlarge and Diversify Delta's Student Body

John W. Evans, Ph.D.

Director of Institutional Research and Planning

Executive Summary

Burgeoning population growth will bring dramatically rising enrollments to Delta College during the next 15 years.

In addition to a greatly expanded local population and large increases in the number of students, demographic changes will transform the ethnic composition of both the San Joaquin County population and the Delta College student body, with ethnic minorities becoming the majority shortly after the turn of the century.

These changes will require major expansion, and will pose large fiscal, managerial, and educational challenges to the College.

These are the major conclusions from an analysis of student enrollment trends and alternative population projections. The principal findings of this analysis are:

- Between 1988 and 2005, San Joaquin County's population will grow from from 456,000 to between 666,728 and 779,300 depending on which alternative projection is used. The Department of Finance predicts the County's population will grow by 46%, while the Center for Continuing Study of the California Economy projects an astonishing 71% increase.

- In addition to this extraordinary growth, the ethnic composition of the County population will be transformed. In 1988, whites outnumbered all ethnic minorities combined by a ratio of two to one. But by 2005, ethnic minorities will predominate.

- The Delta College student body will mirror these local population changes. Fall enrollments will rise from 16,700 in 1988 to between 27,270 and 32,781 in 2005, again depending on which alternative projection is used.

- White students, which outnumbered all minority students combined in 1988 by nearly two to one, will themselves be a statistical minority shortly after the turn of the century.

- Participation rates (the percent of the County population that attends Delta College) vary greatly among sub-groups of the population. Specifically,

  -Overall, one in every 20 people (5.54%) in the San Joaquin County college-age population (18-65+) was registered at Delta College in the Fall of 1989.

-Enrollment is highest in the group that has just graduated from high school (those 19 and under). One in every three County residents in this group (35.92%) is registered at Delta.

-In almost every age and ethnic group, women have a higher enrollment rate than men. The notable exception is Asians, where men enroll at higher rates, except in the 65-and-over age group.

-Whites and blacks are enrolling at Delta College at essentially the same rate (about 5%), which is slightly *below* average. Hispanics are well below average (at 4.40%), but Asians are enrolling at *twice* the average rate for the total college-age population (10.56%).

-These differences are sharpened in the 19-and-under age group. In this group, whites enroll at about the average rate (35.79%), blacks and Hispanics are well below average (at about 23%), while the enrollment rate for Asians is *two to three times* that of the other ethnic groups (71.33%).

-Black males and Hispanic males have the lowest enrollment rates in the educationally crucial 19-and-under age group--about one in five--while an astonishing *four out of every five* (82.43%) Asian males in this group was registered at Delta College in the Fall of 1989.

The large number of new students and the changes in their ethnic composition will pose major challenges for Delta College.

As the number of underrepresented and underprepared students increases dramatically, and as admission to the UC and CSU systems likely becomes more rather than less difficult, the avenue to a better life for these students will increasingly depend on the community college's role in providing access to postsecondary education.

If Delta College is to accommodate this explosion of growth and realize the opportunities it presents for advancing educational equity among underrepresented groups, it will have to plan and implement major expansions in its physical plant, faculty, staff, courses, and services.

Beyond these expansions of scale, the College will have to face the major educational challenges that will result from the increased proportion of educationally and linguistically disadvantaged students.

Projecting Enrollments for Delta College

Explosive Population Growth Will Enlarge and Diversify Delta's Student Body

I Introduction--the Dynamics of Growth

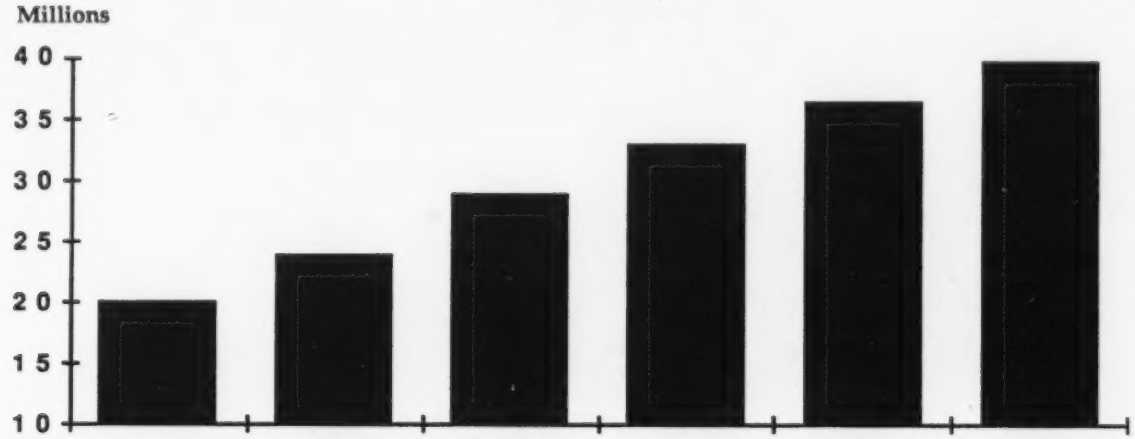
The coming decade will bring dramatically rising enrollments to all levels of California's educational system. These new waves of students will require a large infusion of resources, and they will pose major educational challenges to California's schools and colleges.

The engine that drives these enrollment increases is the State's burgeoning population. In 1970, California's population stood at 20 million. At that time, one in every 10 Americans lived in California. In the two decades since then, the State's population has increased by 40%, and now stands at 29 million. One in every eight Americans now lives in California.

As dramatic as this growth has been, and as momentous are the effects it has already had on California's institutions and public services, we can predict with near certainty that the State's expansive population growth will continue into the foreseeable future (Chart 1).

CHART 1

Actual and Projected California Population, 1970 to 2020 (in Millions)



Source: Demographic Research Unit, State Department of Finance

In a recent analysis of the implications of California's growth for its colleges and universities, the California Postsecondary Education Commission (CPEC), captured the magnitude of these trends by noting that "...every

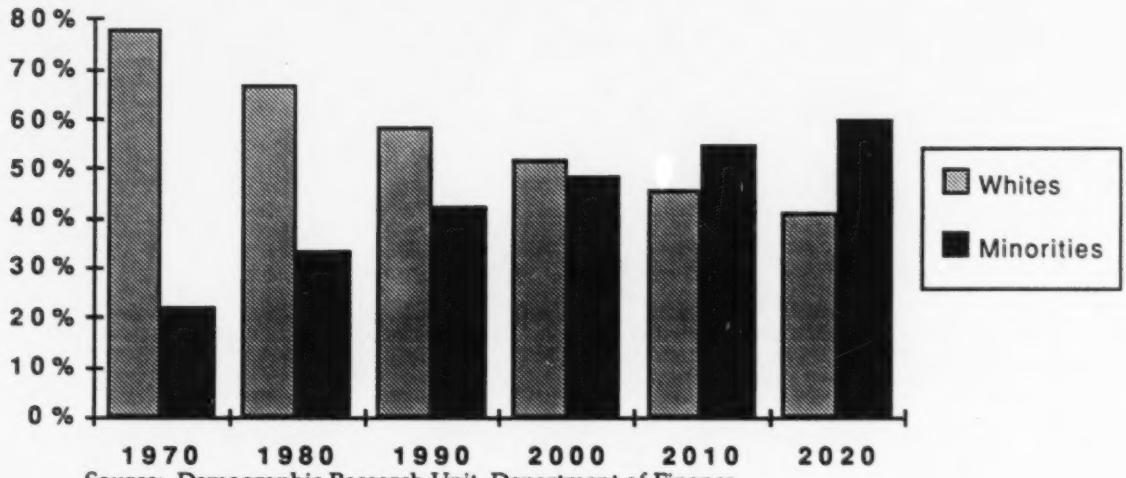
month California is adding population sufficient to populate a city the size of Davis, and every year it is adding population almost sufficient to populate a city the size of San Francisco."[1]

Ethnic Transformation

The changes that are occurring go beyond the massive increase in numbers. While the State's population doubles between 1970 and 2020, its ethnic composition will be transformed. In 1970, whites outnumbered all ethnic minority groups combined by a ratio of nearly four to one. But by shortly after the turn of the century, ethnic minorities will collectively comprise the majority of California's population (Chart 2).

CHART 2

Ethnic Composition of California's Population, 1970 to 2020



Source: Demographic Research Unit, Department of Finance

Impact on the State's Educational System

These extraordinary changes in California's population will be translated into major enrollment increases at all levels of the State's educational system:

- From 1988 to 2005, California's K-12 enrollment will go from 4.5 to 6.3 million, an increase of 39%.[2]

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[1]CPEC, "Higher Education at the Crossroads," Sacramento: 1990, p. 13.
[2]Guthrie, J. W., *et. al.*, "The Conditions of Education in California, 1988," Policy Analysis for California Education (PACE). Berkeley: U.C. Berkeley, 1988, p. 1.

- Just in the period from 87-88 to 96-97, the elementary and secondary school population will increase by more than a million students. This will require 42,000 more teachers, 2,100 more schools, and $7.7 billion just to maintain the current level of service.[3]

- From 1988 to 2005, CSU enrollments will rise 31% from 355,106 to 465,700.[4]

- UC undergraduate enrollments will go from 121,739 to 180,200, an increase of 48%.[5]

- Community College enrollments are projected to increase 41% from 1,333,191 to 1,873,210, requiring 23 new campuses.[6]

San Joaquin County

As remarkable as the statewide pattern of growth and diversity is, it is dramatically accentuated in San Joaquin County.

The County's population is projected to grow from 456,000 in 1988 to between 666,728 and 779,300 in 2005, depending on which projections are used. The Department of Finance (DOF) predicts the county population will grow by 46%, while the Center for Continuing Study of the California Economy (CCSCE) projects an astonishing 71% increase (Chart 3).

The County will also experience the same ethnic diversification of its population that will prevail throughout the State. In 1988, whites outnumbered all minorities combined by nearly two to one. But by 2005, ethnic minorities will predominate (Chart 4).

These data on the the County's expanding population and diversifying ethnicity provide background for the task of determining precisely what the implications are for Delta College's future enrollments.

How Enrollment Projections Are Developed

Like most techniques for predicting the future, enrollment projections are an inexact science. Compared to forecasts of oil prices, health care costs, divorce rates, and the balance of payments, enrollment projections are probably at least as good. But the many changing variables that affect the choice and the ability to pursue postsecondary education will always make enrollment projections imprecise--sometimes distressingly so.

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[3]Guthrie, J. W., *ibid.*
[4]CPEC, *op. cit.*, p. 19.
[5]CPEC, *ibid.*
[6]CPEC, *ibid.*

CHART 3

Comparative Population Projections for San Joaquin County, Department of Finance (DOF) vs. Center for Continuing Study of the California Economy, 1988 to 2005

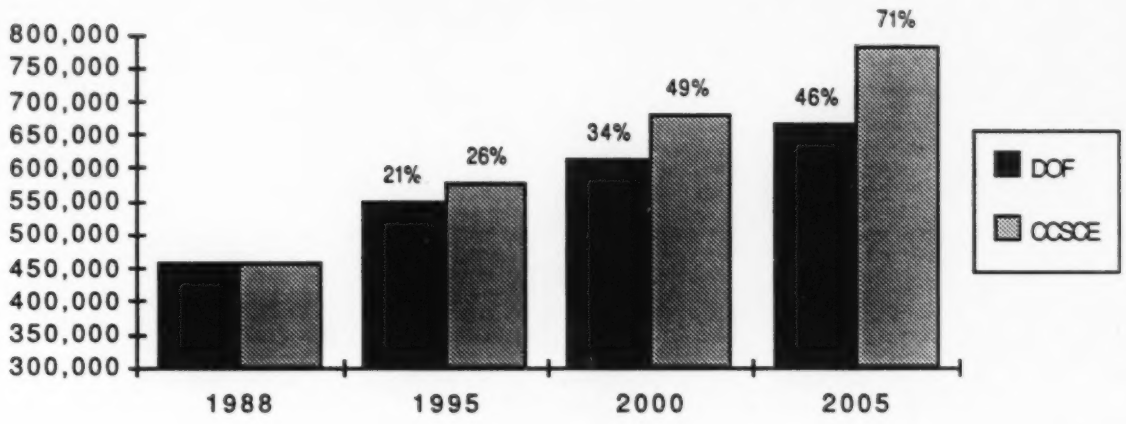
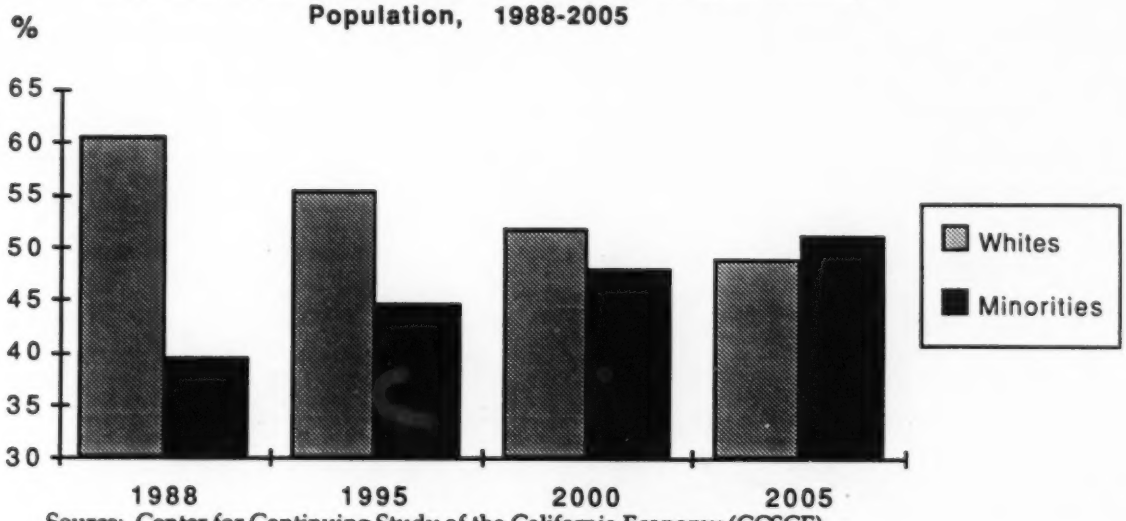


CHART 4

Projected Ethnic Composition of the San Joaquin County Population, 1988-2005



Source: Center for Continuing Study of the California Economy (CCSCE)

Nevertheless, because capital outlays, faculty staffing and, indeed, an institution's fiscal viability all depend on having a reasonable approximation of how many students there will be, responsible planning requires that projections be developed.

At the elementary and secondary level, the task of projecting enrollments is comparatively straightforward. The standard approach, usually referred to as the "cohort survival" method, begins by taking a cohort of kindergarten children and computing "survival ratios" for each succeeding grade, i.e., the ratio of the number of children in a given grade to the number who were in the previous grade in the previous year. Adjustments are made for in-migration. This method does not predict the number of children entering kindergarten, but that is usually handled by using a "line of best fit" through the kindergarten enrollment data for the previous five years.

Forecasting postsecondary enrollments is more difficult because attendance is not required, it is not free, entrance requirements may have to be met, there are many schools to choose from, and most institutions draw from populations beyond their local area.

Projecting community college enrollments is less complex than for four year schools because most community colleges do draw largely from their local populations, fees are modest, and entrance requirements are few.

The basic method used in this report, and the one used by the DOF and the CCC Chancellor's Office, is to apply historical college participation rates to population projections.

This is less straightforward than it sounds because developing both these key data elements is difficult and controversial.

Participation Rates

First, on the matter of participation rates--which is simply the proportion of the local college-age population that actually attends the college in question--it is necessary to select a year or a span of years on which to calculate the rate. This choice is critical because the selection of a year or span of years with atypically high or low attendance will result in large over- or under-estimates of future enrollments.

This has been a problem in California because of the downturn in enrollments that followed the restriction of staffs and the curtailment of course offerings caused by Proposition 13. The CCC Chancellor's Office believes the enrollment projections developed by the DOF are too low because "abnormal budget cuts between 1982 and 1984 artificially depressed historic and projected participation rates."[7]

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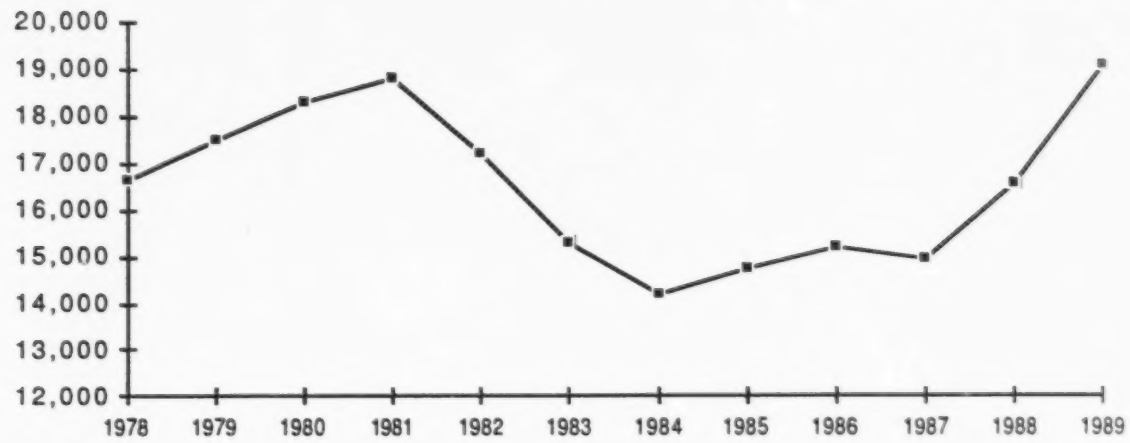
[7]California Community College Chancellor's Office, "Long-Range Capital Outlay Planning," Sacramento: 1989, p. 2.

As can be seen from Chart 5, enrollment projections based on the temporarily depressed participation rates of the mid-1980's would seriously underpredict the enrollments of future years.

CHART 5

Delta College Fall Enrollments (First Census), 1978-79 to 1989-90



Moreover, the predictive accuracy of participation rates will vary as a result of how precisely they are calculated. For example, if we simply multiply the present overall participation rate, i.e., the percent of the *total* San Joaquin County population (over age 17) that is currently attending Delta College, times the estimated population for the year 2000, and do not take into account the fact that specific age, gender, or ethnic groups which are increasing faster than the general population may have significantly higher or lower participation rates, then, clearly, our enrollment projections for the year 2000 will be seriously inaccurate.

The population projections developed by the DOF--and therefore the participation rates and enrollment projections based on them--utilize only age and gender breakdowns. Because ethnic minorities, particularly Hispanics and Asians, are increasing at a faster rate than the rest of the population (see Chart 2, above), in addition to using the DOF estimates we also obtained population projections from another source (The Center for Continuing Study of the California Economy (CCSCE) in Palo Alto) which provide ethnic breakdowns as well.

Future Changes

Having selected a time period on which participation rates should be based, and having increased their accuracy by obtaining data on specific age-gender-ethnicity groups, there is the further problem of what assumptions

should be made about future changes in these rates. Should we assume, for example, that the current participation rates of minorities will stay the same, or will they change significantly, and if so, in what direction and by how much?

Different assumptions about future participation rates have become a major issue in the widely divergent enrollment projections produced for the CSU system by the CSU Chancellor's Office and those issued by the DOF. CSU projects 541,300 students by 2005, which is 75,600 more than the 465,700 predicted by the DOF. Both estimates use the same DOF population projections, but CSU assumes that by 2005 the enrollment rate of black and Hispanic students will be the same as whites.

CPEC has commented that "...the State University assumes that underrepresented students will participate in higher education in the year 2005 at rates equivalent to those currently achieved by white students. This expectation is obviously a laudable policy goal and is consistent with State and Commission policy. Yet it may not be reasonable for capital outlay planning."[8]

On the other hand, to incorporate no change in the future participation rates of blacks and Hispanics is to tacitly assume that no progress will be achieved in the equity goals that are strongly espoused by all the State Colleges and Universities, and are a key element in the Master Plan.

Population Projections

There are similar problems and controversies surrounding the population projections. (The population projections, when multiplied by the expected participation rates, produce the enrollment projections.)

The CCSCE population projections produce significantly larger numbers in the out years than those of the DOF. The CCSCE projection for San Joaquin County's college age population in 2005, for example, calls for 20% more people than the DOF prediction.

The Chancellor's Office believes the DOF numbers are too low.

> "...[DOF's] population projections ('Baseline 86')...appear to be significantly understated. Under Baseline 86 estimates, California's population was expected to grow by just under 500,000 per year between 1985 and 1990, a yearly increase of about 1.8 percent. By contrast, more recent DOF population estimates (Report 87 E-2, January 1987) indicated that California's population grew by 643,300 in 1986 and by 662,000 in 1987, rates of 2.5 percent annually. ...Population estimates

[8]CPEC, *op. cit.* (1989 Draft), p. 4.

are proving to be too low. Chancellor's Office staff are examining DOF's projection method in order to develop valid alternatives."[9]

There are differences in assumptions and extrapolation techniques between the two organizations. In addition, those who favor the DOF projections argue that CCSCE's client base of commercial companies produces a bias toward larger numbers and markets. Those who prefer the CCSCE projections feel that pressures on the DOF to hold back budget forecasts and minimize the likely costs of entitlement programs result in an underestimation bias in their projections.

In this report, we develop and compare enrollment projections based on both the DOF and CCSCE population forecasts.

The Enrollment Projections

Proceeding from the points discussed above, the enrollment projections for Delta College presented below were developed using the following procedures:

1. The enrollment projections were developed by applying the 1989 Fall student participation rates (i.e., the proportion of the San Joaquin County population attending the College) to population projections for the County for the years 1990 thru 2005.[10]

2. Two sets of <u>population projections</u> were used to produce alternative enrollment projections:

   a. <u>Those produced by the DOF.</u> Instead of using the most recently published population projections (now almost a year old), the latest revisions were obtained from DOF. These projections provide estimates for all years from 1989 to 2005 (and beyond to 2020). They provide breakdowns only for age and gender (none for ethnicity). In addition to the updated estimates, population data were also obtained from DOF for the over-65 age group which is not normally included in their *Community College District Projection Base Populations*. About 2% of Delta's students are over 65. Including both theses students and the over-65 population base from which they come (which constitutes about 16% of the San Joaquin County population) in

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[9]CCC Chancellor's Office, *op. cit.*, pp. 2, 11.

[10]The boundaries of the Delta College District extend well beyond those of San Joaquin County. However, since only about three percent of Delta's students come from outside the County, and since population projections for these counties were not available, all calculations were made using the population projections for San Joaquin County . The students from outside the county are included in the denominator of the participation rate calculation. This follows the procedure used by the DOF in their enrollment projections.

the analysis increases the accuracy of the enrollment projections.

b. Those produced by the CCSCE. These population projections predict larger increases than those of the DOF. They provide breakdowns by major ethnic groups, as well as age and gender. CCSCE provides projections only for 1988, 1995, 2000, and 2005. Interpolations were calculated for the intervening years in order to allow direct comparisons with DOF's annual enrollment projections.

3. Using these two sets of population data, *three* alternative sets of enrollment projections are provided:

a. Those calculated and published by the DOF. These are the "official" state enrollment projections.

-They are based on the DOF's September '89 population projections.

-They utilize participation rates based on pre-'89 enrollments.

-They cover only the period from 1989 to 1998, but extrapolations to 2005 developed by the CCC Chancellor's Office are used for the later years.

b. Those developed for this Report using DOF population projections.

-These projections use updated DOF population projections augmented with data for the over-65 age group.

-They utilize 1989 Fall (First Census) enrollment data to calculate participation rates for all the age/gender groups. As noted above, the time period chosen to calculate the participation rate is critical. Fall 1989 seems more defensible than any other for several reasons. First, it is the most recent. Second, it avoids the clearly atypical period of the mid-eighties when participation rates were temporarily depressed by the effects of Proposition 13. Third, it is probably a conservative estimate of future participation rates, because they appear to be returning to their historically higher levels. As shown in Chart 5, 1989 was the first year year enrollments have returned to their 1981 high, and since the population was significantly lower then, participation rates at that time were higher than they are now.

c. Those developed for this Report using CCSCE population projections.

-These projections use CCSCE population projections for 1988, 1995, 2000, and 2005, and interpolated projections for the intervening years.

-They utilize 1989 Fall (First Census) enrollment data to calculate participation rates for all the age/gender/ethnicity groups. (See the comment in 3b, above, on the choice of time period for establishing the participation rates.)

4. The DOF projections make some effort to incorporate expected increases in participation rates (e.g., among minority groups) by utilizing the slope of change over recent years in the overall participation rate, but it is not clear precisely how this was done.

The other two newly-developed sets of projections include no effort to estimate or incorporate any estimated increases or decreases in the participation rates of any sub-group of the population.

As pointed out above, failure to include such expected increases in the participation rates of minorities may seem, from the policy point of view, to be tacitly assuming that no progress will be made on the key equity goals that are fundamental to the Master Plan and are espoused by all the postsecondary institutions individually.

Nevertheless, the decision was made not to incorporate any such adjustments to existing participation rates for two reasons. First, there are no good data on which to base such adjustments. On the one hand there are widespread outreach efforts being made to raise participation rates; but on the other hand, matriculation rates among blacks have been falling nationwide.

Second, given the uncertainties about the trends, and given the compelling justifications the State requires for needed capital improvements in the context of ever tightening budgets, it seems better to err on the conservative side. With the baseline data we have now assembled on all the age/gender/ethnicity groups, we can monitor participation rates in them, and if significant increases or decreases occur, revisions in the enrollment projections can be made.

Table 1 presents the enrollment projections produced by the three methods, and Chart 6 displays the same data graphically.

The first and most important conclusion from the data in Table 1 is that, regardless of which projection alternative is used, Delta's enrollments are predicted to expand dramatically by 2005, nearly doubling under the CCSCE method, and rising by 63% under the most conservative DOF forecast.

TABLE 1
ALTERNATIVE FALL ENROLLMENT PROJECTIONS FOR DELTA COLLEGE, 1990-2005

		I Department of Finance	II SJDC (DOF Data)	III SJDC (CCSCE Data)
(Actual)	1988	16,700	16,700	16,700
	1989	17,720	19,036*	19,036*
	1990	18,340	19,690	19,814
	1991	18,660	20,200	20,512
	1992	19,010	20,684	21,210
	1993	19,310	21,172	21,908
	1994	20,070	21,711	22,606
	1995	20,720	22,248	23,302
	1996	21,110	22,748	24,224
	1997	21,580	23,249	25,146
	1998	22,270	23,796	26,068
	1999	23,004	24,418	26,990
	2000	23,772	25,076	27,913
	2001	24,450	25,672	28,887
	2002	25,151	26,276	29,861
	2003	25,840	26,872	30,835
	2004	26,568	27,497	31,809
	2005	27,270	28,109	32,781

*Actual

Explanatory Notes:

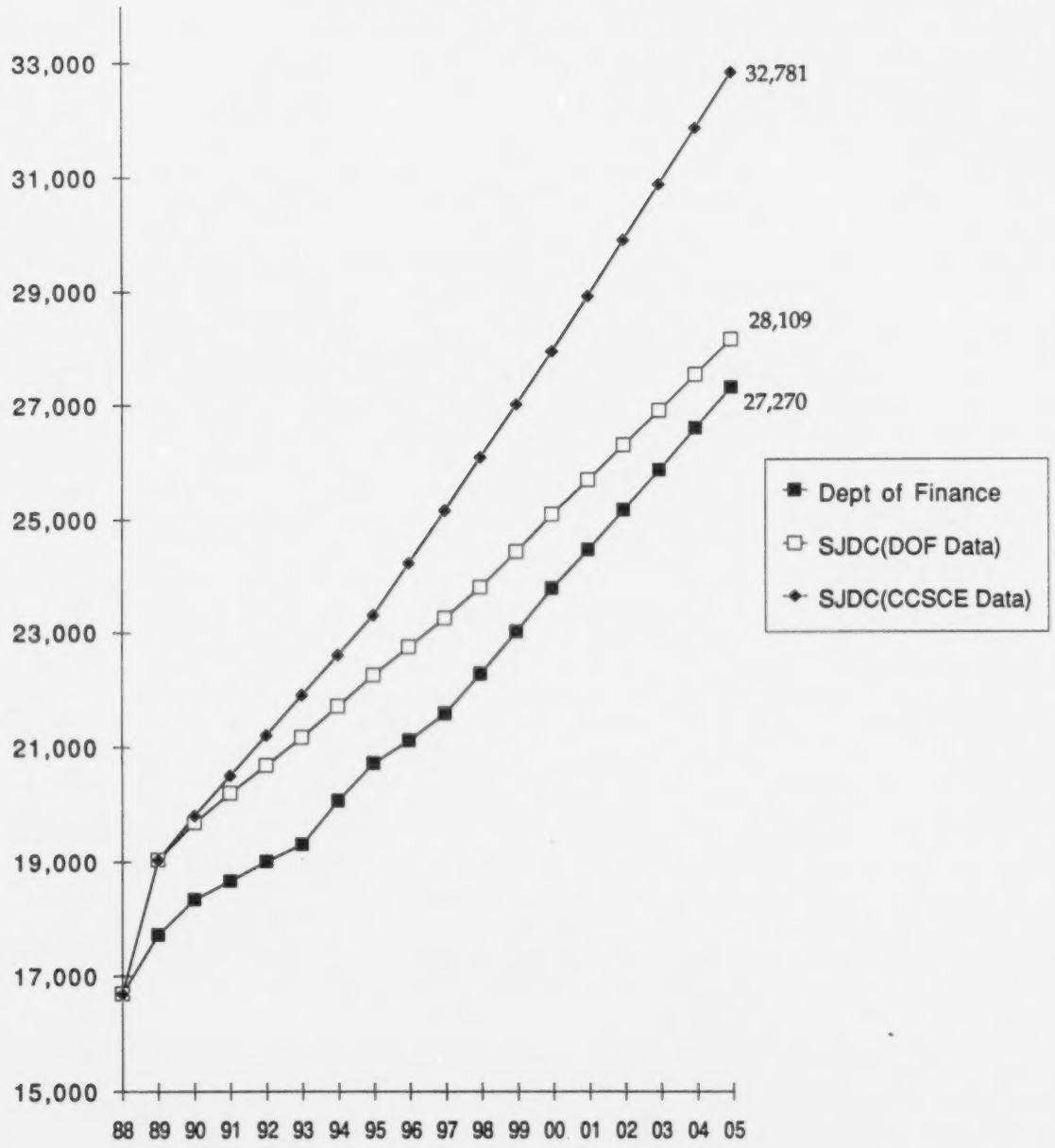
I The DOF projections make some allowance for increased minority participation rates by extrapolating the participation rate trend between 85-89, but it is not clear precisely how this was done.

II These projections use updated (6/90) DOF population projections and the 1989 Delta participation rates, refined for age and gender. No allowance is made for possible increased minority participation rates from 1989 to 2005.

III These projections use CCSCE population projections, and the 1989 Delta participation rates refined for age, gender, and ethnicity. No allowance is made for possible increased minority participation rates from 1989 to 2005. Since actual CCSCE data were available only for 1988, 2000, and 2005, the enrollment projections for the intervening years have been interpolated.

CHART 6

ALTERNATIVE FALL ENROLLMENT PROJECTIONS FOR DELTA COLLEGE, 1990-2005



Regardless of which of the three projections turns out to be the most accurate, enrollment increases of this magnitude will have far reaching consequences for the College--in the requirement for increased operating funds, in the need for plant expansion and additional equipment, and in the recruitment of a substantially expanded faculty and staff.[11]

The second conclusion is that, despite the fact that all three projections call for large enrollment increases with major implications for expansion, the differences among them are not trivial. The difference between the low DOF and the high CCSCE projections for 2005 is 5,511 students, or 29% of the present (Fall '89) enrollment.

This means that, for planning purposes, a choice among the three enrollment projections will have to be made. The weight of evidence seems to fall more in the direction of the CCSCE projections. As the Chancellor's Office has observed, the DOF population projections--and therefore the enrollment projections based on them--have historically been on the low side, even though the enrollment projections contain some upward adjustment in the out years for assumed increases in minority participation rates.

As noted in Table 1, the most recent DOF enrollment estimates which were issued in October of 1989 projected a Fall 1989 enrollment of 17,720 for Delta College; the actual enrollment was 19,036. The other two projections (Columns II and III in Table 1) produce higher numbers even though they do not incorporate any adjustments for changes in participation rates. This means that if such adjustments were included in enrollment projections II and III, the differences between them and the DOF projections would be even larger than they are.

Beyond the Numbers: Wide Variations in Ethnic Group Growth and Participation Rates

It is important to focus, as we have thus far, on the sheer size of the projected numbers and their far reaching implications for the College's future.

But it is also important to look beyond the gross numbers to the underlying changes that will bring not only massive enrollment increases but will also transform the ethnic composition of the student body, and bring new educational challenges to the College.

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[11]Two additional research reports are being prepared on these related issues. The first report translates projected enrollment increases and the associated Weekly Student Contact Hours (WSCH) into the "capacity ratios" that indicate when the College has exceeded capacity and can justifiably seek State funding for plant expansion. The second report couples enrollment projections with predicted faculty retirements to produce an estimate of faculty vacancies for each year between now and 2005.

Sub Group Population Changes

Table 2 presents the projected rates of increase for the age, gender, and ethnic sub-groups of the San Joaquin County college-age population (18-65+) between 1989 and 2005.

Table 2
San Joaquin County projected Population Increase Rates, By Age, Gender, and Ethnicity, 1989-2005

Ethnic Group	Gender	18-19	20-24	25-29	30-34	35-64	65 & Over	Total 18-65+
White	Total	56.0%	22.1%	-0.4%	4.8%	56.1%	30.3%	36.0%
	Male	53.8%	21.6%	1.7%	4.2%	56.8%	27.3%	35.4%
	Female	58.3%	22.7%	-2.6%	0.9%	55.9%	32.6%	36.0%
Hispanic	Total	97.3%	61.6%	50.5%	66.0%	161.5%	150.6%	114.8%
	Male	90.0%	61.5%	47.5%	73.2%	169.1%	126.8%	113.6%
	Female	105.9%	61.7%	57.1%	58.0%	153.7%	169.2%	114.9%
Asian & Other	Total	146.7%	88.1%	68.8%	68.5%	176.0%	175.5%	136.1%
	Male	157.1%	82.6%	64.0%	66.7%	181.5%	139.1%	130.6%
	Female	142.9%	100.0%	70.8%	70.4%	167.0%	207.7%	139.7%
Black	Total	55.6%	42.3%	25.0%	29.6%	139.1%	52.6%	76.0%
	Male	60.0%	37.5%	26.7%	26.7%	140.0%	37.5%	73.4%
	Female	75.0%	50.0%	33.3%	33.3%	134.3%	70.0%	88.9%
Total	Total	77.8%	41.3%	23.2%	30.2%	95.4%	61.0%	66.5%
	Male	73.6%	39.6%	22.9%	35.1%	98.5%	56.1%	66.7%
	Female	79.7%	43.4%	22.9%	25.2%	92.6%	65.9%	66.4%

Source: Center for Continuing Study of the California Economy (CCSCE)

The projected increase for the entire college-age population is about 67%, but within that overall rate there is enormous variation. Whites in this population will increase by 36%. But this substantial increase will be dwarfed by the much larger increases in the minority populations: 76% for blacks, 115% for Hispanics, and 136% for Asians. Similar wide differences exist among age groups. The 25-29 year old group, for example, will increase by only 23%, whereas those between 35 and 64 will increase by 95%.

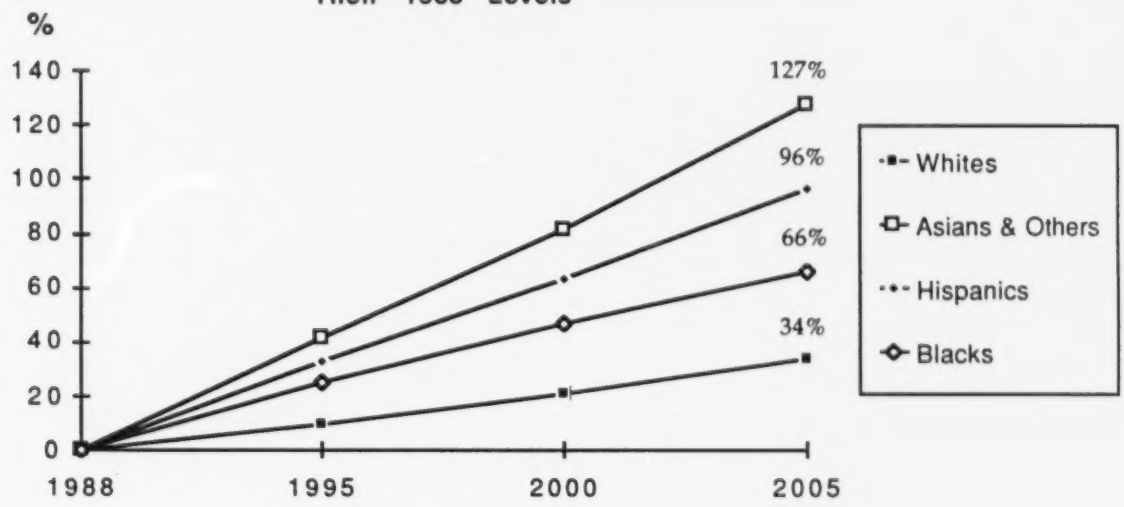
In short, as the San Joaquin County college-age population grows by 67% between now and 2005, these widely differing rates of growth among sub-groups of the population will transform its ethnic composition.

Impact on Delta College

These changes will, of course, be reflected in Delta's student body. Chart 7 shows the large differences in rates of increase among students from the major ethnic groups that will take place between 1988 and 2005. Similar to the pattern in the population at large noted in Table 2, the 34% increase in white students is eclipsed by the much larger increases in the other ethnic groups: 66% among blacks, 96% for Hispanics, and 127% for Asians.

CHART 7

Percent Increase of Delta College Ethnic Group Students From Their 1988 Levels



The result of these different rates of increase will be to bring about a major change in the the ethnic composition of the student body. Table 3 shows the changes that will occur from 1988 to 2005.

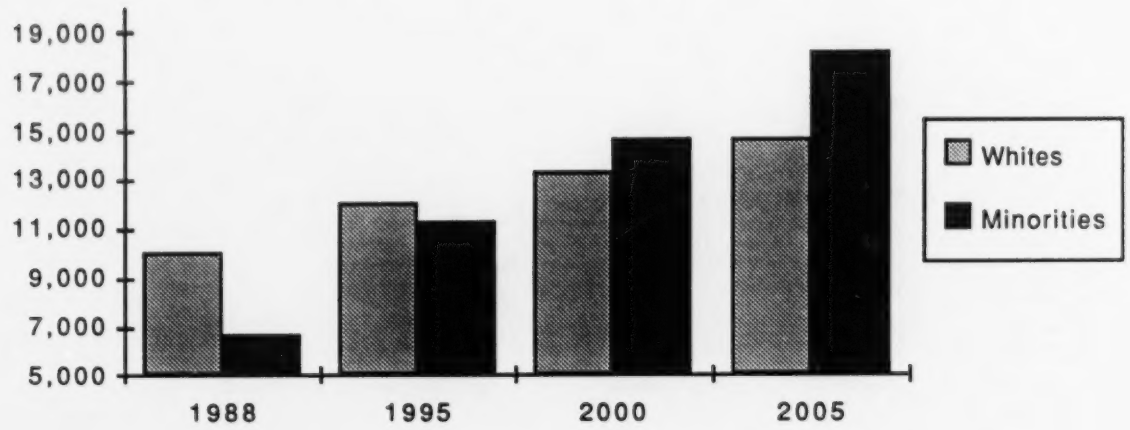
TABLE 3
Ethnic Composition of Delta College Students, 1988 and 2005

	1988	2005
Whites	60%	45%
Hispanics	16%	22%
Asians & Others	19%	29%
Blacks	5%	5%

In sum, from a 1988 student population in which whites outnumbered all minority students combined by a ratio of nearly two to one, by 2005 minority students will predominate (Chart 8).

CHART 8

Projected White and Minority Enrollments at Delta College, 1988-2005



Variation in Participation Rates

As noted above, projected enrollments are the result of a basically simple calculation: multiplying the expected participation rate times the projected population. But the point was stressed that using a single, average participation rate and multiplying it by a single, total population figure would produce a gross and possibly misleading estimate. To maximize accuracy, it is necessary to make calculations for the many different sub-groups within the population and combine them, because there is great variation among these sub-groups in both their rates of population increase and Delta College participation.

We have seen earlier (in Chart 2, Chart 7, and Table 3) what large differences there are in the rates of increase among ethnic groups, both in the general and the student populations.

There are equally wide differences in Delta College participation rates among the age/gender/ethnicity groups, and they are displayed in Table 4.

The variation in the rates at which different population groups attend Delta College is truly remarkable:

- Overall, one in every 20 people (5.54%) in the San Joaquin County college-age population (18-65+) was registered at Delta College in the Fall of 1989.

TABLE 4
Fall 1989 San Joaquin County Participation Rates at Delta College, by Age, Gender, and Ethnicity (N=19,002)*

Ethnicity	Gender	19 and Under	20-24	25-29	30-34	35-64	65 and Over	Total
White	Total	35.79%	10.23%	5.81%	5.52%	3.21%	0.56%	5.08%
	Male	31.51%	9.40%	4.48%	3.77%	2.14%	0.53%	4.23%
	Female	40.42%	11.19%	7.18%	7.03%	4.22%	0.58%	5.85%
Hispanic	Total	23.95%	8.29%	4.96%	3.71%	2.02%	0.15%	4.40%
	Male	22.80%	8.81%	4.34%	3.18%	1.59%	0.15%	4.12%
	Female	25.29%	7.72%	5.82%	4.30%	2.47%	0.15%	4.68%
Asian & Other	Total	71.33%	24.29%	11.27%	8.02%	5.13%	1.27%	10.56%
	Male	82.43%	25.48%	12.44%	9.07%	5.49%	1.00%	11.76%
	Female	70.43%	22.84%	9.58%	6.96%	4.75%	1.50%	9.36%
Black	Total	23.22%	8.46%	5.82%	4.74%	2.67%	0.37%	5.09%
	Male	22.60%	5.81%	4.27%	3.33%	1.89%	0.63%	4.16%
	Female	24.00%	12.70%	8.25%	6.50%	3.37%	0.20%	6.42%
Total	Total	35.92%	11.17%	6.24%	5.35%	3.15%	0.56%	5.54%
	Male	32.99%	10.79%	5.36%	4.38%	2.37%	0.52%	5.05%
	Female	38.66%	11.61%	7.20%	6.33%	3.89%	0.59%	6.02%

*These rates are based on population estimates developed by the Center for Continuing Study of the California Economy. (The 1989 population figures are interpolated based on CCSCE estimates for 1988 and 1995.) The formula for obtaining the rates for each age-gender-ethnicity cell is:
(1989 enrollment) / (1989 population estimate).

- Not surprisingly, enrollment is highest in the group that has just graduated from high school (those 19 and under). One in every three County residents in this group (35.92%) is registered at Delta.

- In almost every age and ethnic group, women have a higher enrollment rate than men. The notable exception is Asians, where men enroll at higher rates, except in the 65-and-over age group.

- The most remarkable and perhaps the most educationally important findings in Table 4 are those relating to ethnicity. Whites and blacks are enrolling at Delta College at essentially the same rate (about 5%), which is slightly *below* average. Hispanics are well below average (at 4.40%), but Asians are enrolling at *twice* the average rate for the total college-age population (10.56%).[12]

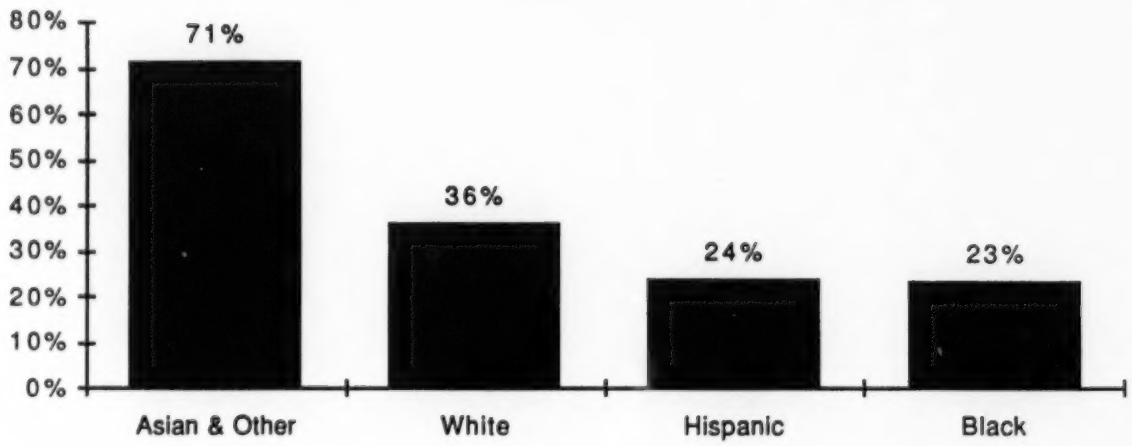
[12]This pattern parallels that found in a broader analysis of ethnic differences among Delta College students. See "Ethnicity: Its Role in Academic Choice and Outcome at Delta College," Office of Institutional Research and Planning, Delta College, 4/27/90.

The differences are sharpened in the 19-and-under age group. In this group whites enroll at about the average rate (35.79%), blacks and Hispanics are well below average (at about 23%), while the enrollment rate for Asians is *two to three times* that of the other ethnic groups. These differences are shown in Chart 9.

Black males and Hispanic males have the lowest enrollment rates in this educationally crucial post high school age group--about one in five--while an astonishing *four out of every five* Asian males in this group was registered at Delta College in the Fall of 1989.[13]

CHART 9

Participation Rates of San Joaquin 18 and 19 Year Olds at Delta College, by Ethnic Group, 1989, (N=19,002)



Conclusions

Delta College can anticipate, and must plan for, large enrollment increases between now and 2005.

These enrollment increases will flow naturally and inevitably from the population increases that will occur generally throughout California but to an accentuated degree in San Joaquin County.

But the change will not simply be one of increased numbers. Burgeoning growth will bring with it a transformation of the ethnic composition of the

[13]It might be assumed that the extraordinarily high enrollment rate among Asians is due in large part to heavy registration in the English as a Second Language Program (ESL) among recent immigrants, and that such students are not full users of the College's main academic programs. This is not the case. Only a handful of Asian students are registered in ESL courses (less than 3%), and most of these students are also registered in other credit courses.

student population, with white students falling into the minority shortly after the turn of the century.

This new scenario will present the community colleges in general and Delta College in particular with an extraordinary combination of challenges. First among these is the opportunity to advance the still unfulfilled vision of California's Master Plan for Postsecondary Education. As the number of underrepresented and underprepared students increases dramatically, and as admission to the UC and CSU systems likely becomes more rather than less difficult, the avenue to a better life for these students will increasingly depend on the community college's role in providing access to postsecondary education.

At a higher social and economic level, if California is to continue as a standard setting society and one of the world's leading economies, its educational system must produce informed citizens and technically sophisticated workers.

If Delta College is to accommodate this explosion of growth and realize the opportunities it presents for advancing educational equity among underrepresented groups, it will have to plan and implement major expansions in its physical plant, faculty, staff, courses, and services. To do this, it must, of course, be able to count on a proportionate increase in resources from the State.

Beyond these expansions of scale, the College will have to face the major educational challenges that will result from the increased proportion of educationally and linguistically disadvantaged students.

Some of the needed responses to this unprecedented growth are already underway. President Horton has formed an Enrollment Growth Task Force which is not only broadly representative of the College's faculty and staff, but also includes representatives of CSU Stanislaus and UC Davis.

Also, three additional studies are being carried out to help guide the plans which must be developed and the decisions which must be made. In the first study, the square footage of all the College's buildings is being re-measured, something which has not been done since the College was built. These figures, combined with the enrollment projections from the present study, will produce revised estimates of when the College's lecture, laboratory, and office spaces will be over capacity and eligible for expansion funding.

The second study will provide data on population growth trends and participation rates in the suburban areas of Lodi, Manteca, and Tracy to help guide future decisions about expansion on the central campus vs. into outlying attendance centers.

The third study will couple the enrollment projections from the present study with age and years of service data on the Delta faculty to provide annual estimates on the need for new faculty between now and 2005.

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